

QUARTERBACKTM

*The **FASTEST** Hard Disk Backup Utility*

Backup to or restore from:

- ✓ Floppy Disks ✓ Streaming tape (AmigaDOS-compatible)
- ✓ CLtd's Konica 10.7MB high-density floppy drive
 - ✓ Inner-Connection's Bernoulli drive
 - ✓ ANY AmigaDOS-compatible device

AMIGATM



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QUARTERBACK_™

The **FASTEST** hard disk backup utility for the Commodore Amiga.

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OVERVIEW

Thanks for purchasing Quarterback. All of us at Central Coast Software appreciate your support, and we promise to do our best to provide high quality programs for your Amiga.

Quarterback is a hard disk backup utility program for the Commodore Amiga. Using Quarterback, owners of all models of Amigas equipped with a hard disk drive can quickly and easily preserve their data and program files on floppy diskettes against the possibility of file loss or a hard disk failure.

Using any hard disk drive is a bit of a gamble. If you are lucky, your hard disk may never fail. If you are not lucky, you may lose a great deal of valuable work. Quarterback greatly reduces the risks of using a hard disk.

Words can scarcely convey that horrible, sinking feeling you get in the pit of your stomach when these awful words flash on your screen:

Volume DHO: has a Read/Write error

or

Error validating drive DHO:

Quarterback makes it fast and simple to copy your valuable files from your hard disk drive to a bunch of floppy disks BEFORE you have trouble with your hard disk. Don't tempt fate! If you see one of these error messages, it may already be too late to save your files. Trying to save your files AFTER the hard disk fails is like closing the barn door after the horse has escaped. Don't wait. Protect your files while you can! After using Quarterback to protect your files, you can be confident that if something happens to one or more files, or your hard disk fails, your files can be restored to their original condition, even if you must replace your hard disk drive.

When you use Quarterback, you are simply making a COPY of your files from the hard disk onto one or more floppy disks. We call this "backing up your files". After using Quarterback to "backup" your files to floppy disk, you need not worry about losing your valuable work, because you can always use Quarterback to COPY one or more of your files from those floppy disks back to the hard disk again. We call this "restoring your files".

Of course, there are other ways to copy your valuable files to floppy disks. You can drag an icon with your mouse, use the CLI COPY command, or use any of a variety of public domain directory utility programs to copy your files from your hard disk drive to one or more floppy disks. So why buy and use Quarterback when you could accomplish the same thing other ways? The answer is convenience. Most of us just won't take the time to backup our files if the job takes a long time or if we have to fool around formatting a bunch of floppy disks to hold the files. Quarterback makes a messy and time-consuming job fast and easy.

It is not necessary for you to backup the programs which you have stored on your hard disk; if they came to you on floppy disks, as most programs do, they are already available on those floppy disks. You should always save those floppy disks in a safe place, just in case you need them again. You really need to backup only your critical data files, which you have created using these programs, and which exist only on the hard disk.

You may find that it is much easier to backup all files (both program AND data) on the hard disk at one time. This approach takes a bit more time and a few more backup floppy disks, but has the advantage that if your hard disk ever fails, you will be able to restore your data files AND PROGRAMS onto the replacement hard disk in exactly the same state that existed at the time you performed the backup.

After you backup your files, you will undoubtedly continue to add more files to the hard disk and make changes to existing files. Soon you will want to protect these new and changed files. One approach is to backup the entire hard disk again. Of course, many of the files on your hard disk will not have changed since the last backup. So if you backup the entire hard disk, you will be backing up files which really don't need to be backed up again. Instead, you may wish to backup only those files which have changed or have been added since the last backup. We call this "incremental" backup. Quarterback makes it easy to identify those files which are new or have changed and, therefore, need to be backed up. In this case the backup process will take much less time and fewer disks. CAUTION: Incremental backups must be made to a SEPARATE set of backup disks!

You CANNOT overwrite an individual file on an existing set of backup disks. Each backup operation completely erases any previous data on a set of disks. Quarterback does NOT allow you to "add" more files to an existing backup set of disks. The "incremental" backup mode always produces a new set of disks which contain only those files which have changed since some previous backup. When you perform an incremental backup you must also retain the previous set of backup disks.

Note: the backup floppy disks produced by Quarterback are NOT standard Amiga floppy disks, and you cannot directly access the files on them. If you attempt to open a Quarterback backup floppy disk by clicking on its icon, Workbench will tell you that the floppy disk is not an AmigaDOS disk. You will see the message:

NOT A DOS DISK

This is NOT an error. Quarterback stores your files on the backup floppy disks in a compact form which AmigaDOS (and Workbench) cannot read. If you need to restore one or more files from a set of floppy disks created by Quarterback, you must restore the file(s) using Quarterback. Quarterback will tell you which backup disk to load and will copy the file back to your hard disk (or any other AmigaDOS device, if you wish).

Here is a quick summary of Quarterback's features:

- * VERY FAST backup/restore - 20MB in 30 minutes, or less (depending on the speed of your hard disk and use of the Fast File System)
- * Backup to or restore from floppy disks, streaming tape (AmigaDOS compatible), Konica's 10.7MB floppy drive, Bernoulli drive, etc.
- * Uses two floppy drives, if available, with automatic switching
- * Backup or restore options: Full drive (all files); selected subdirectories; individual files (in any combination); incrementally by archive bit or file date
- * Automatically builds, sorts, and displays catalog of files
- * Provides easy movement through catalog by subdirectory
- * Writes two copies of the catalog to the backup volumes for safety
- * Includes/excludes files by name (with wild cards), file date, or archive bit
- * Calculates the number of backup volumes you'll need
- * Handles files of unlimited length, unlimited subdirectories, and unlimited files per subdirectory
- * Automatically formats diskettes with no delay as it writes
- * Sequentially numbers and date/time stamps backup volumes
- * Verifies backup volume data integrity by reading data from backup volumes after writing and comparing with original data (optional)
- * Restores original date/time stamp, file notes, and all protection bits (old as well as new) for both files and subdirectories
- * Checks the sequence number and date/time stamp of each volume before restoring files from it
- * Beeps for volume change (optional)
- * Produces backup/restore report to disk or printer (optional)
- * Provides MANY error checks, but handles errors in a friendly and logical way
- * Runs from CLI or Workbench 1.2 or later

- * Supports either Fast File System or traditional Amiga file system
- * Accepts CLI parameters and batch command files for "power" users
- * Conforms to Amiga multitasking standards (does NOT take over your computer)
- * Runs in 512KB (and does NOT use every byte of available memory!)
- * Not copy protected
- * Works with all AmigaDOS-compatible hard disk drives

HARDWARE and SOFTWARE REQUIREMENTS

Quarterback runs on all Amigas, including those equipped with accelerator boards. It requires a minimum of 512KB RAM, and one standard Amiga 3.5-inch floppy disk drive. Quarterback uses two floppy drives for backup or restore, if available.

Quarterback works with any hard disk drive which appears as a standard AmigaDOS file-structured device. In fact, the program can be used to backup files from ANY valid AmigaDOS file-structured device, including hard disk drives, local area networks, ram-disks, or even floppy drives.

Quarterback V2.0 can backup your hard disk to other devices in addition to floppy disks. This includes many new high-capacity Amiga devices, such as the Konica 10.7MB high-density 5.25-inch floppy disk drive, AmigaDOS-compatible streaming tape drives, and Iomega's Bernoulli Box. In fact, Quarterback can backup your files to almost any device which can be accessed via AmigaDOS.

Quarterback requires Workbench V1.2 or later. Quarterback works fine with the new Fast File System available under Workbench V1.3.

Quarterback V2.0 can restore files from backup volumes produced by all earlier versions of Quarterback.

INSTALLATION

Quarterback is not copy protected. We encourage you to make one or more backup copies of the Quarterback master disk for your own protection. But please do not give or sell copies of Quarterback to other people.

Before you install or use Quarterback, please read the Release-Notes file on the Quarterback master disk. There you will find the latest changes to the program, if any, and any corrections to this manual.

You can copy Quarterback from its master disk to your hard disk or your working Workbench floppy disk, as you wish. Drag the Quarterback program icon to the drawer where you want it, or use the CLI COPY command to move Quarterback and its icon.

Remember this: keep a copy of Quarterback on a floppy disk in case your hard disk fails! You'll need Quarterback to restore your files to the hard disk, but if your only copy of Quarterback is on the hard disk ... well, you get the picture.

If you intend to run Quarterback from CLI (instead of from Workbench) we recommend that you set your stack to at least 10,000. To do this, you may wish to place this command early in your startup-sequence:

```
STACK 10000
```

You can use a larger stack, if you wish.

As the last step of installation, please send in your postage-paid product registration card. If we find any serious problems with your version of Quarterback, we may offer you a free upgrade to correct the problem. And if we decide to add new features, you may be offered a chance to purchase the upgrade at a very low price. It costs you only a few moments of your time to send in the registration card (at least in the USA). As a matter of company policy, we will not give your name and address to anyone else. But if we don't hear from you, we have no way to contact you, so you may miss out on a free upgrade or other special opportunities. The card is for your benefit, not ours. Fill it out and drop it in the mail!

DISASTER PLANNING

Most of us hate to "waste" all that time backing up our hard disk drives. But we all know, usually through our own bad experiences, how necessary this really is. Quarterback was designed to make the process as painless as possible.

The easiest way to reduce the pain is to perform a full backup only occasionally, perhaps once a week or once a month. Then use the "incremental" features of Quarterback to backup only those files which have changed since the last backup. Quarterback uses the "archive bit" in the AmigaDOS directory to find new files or files which have changed since the last backup.

The archive bit works this way: when you backup your files, you can direct Quarterback to turn on a special backup flag in the AmigaDOS directory entry for each file as it is backed up. This backup flag (called the "archive bit") indicates that a file has been successfully backed up to floppy disk. The file is thus said to have been "archived". However, when a file is newly created or if any changes are made to an existing file by any program, AmigaDOS turns off the backup flag (archive bit) for that one file. The next time you perform a backup, you can direct Quarterback to backup only those files which have the backup flag (archive bit) OFF, indicating that the files are new or have changed since the last backup. You don't have to tell your Amiga which files need to be backed up; your Amiga can figure it out for you. Neat, huh!

Warning -- Incremental backup can only work if you direct Quarterback to turn on the archive bit when you do your full backup. If you forget to direct Quarterback to set the archive bit, then later, if you try to perform an incremental backup, ALL your files will show up as needing to be backed up! A word to the wise...

Another way to perform an incremental backup is to direct Quarterback to backup files by file date -- those which have a date later than the previous backup.

There are two schemes using the archive bits for incremental backups. The two schemes differ in the number of sets of backup disks you must maintain, and the speed of the backup. You should choose one of these schemes and stick with it.

Backup Scheme 1.

This scheme uses only two sets of backup disks (one full, one incremental). The advantage of this scheme is that it requires only two sets of backup disks. The disadvantage of this scheme is that, as time goes by, each incremental backup takes longer and longer.

1. Once each month make a full backup of all your files on the hard disk to a "full backup" set of disks. For the full backup, make sure you direct Quarterback to SET THE ARCHIVE BITS. When the backup is complete, put this "full backup" set of disks aside. You won't use them again until you perform another full backup next month.
2. Between full backups, perhaps once a week, perform an incremental backup of ALL files which have changed SINCE THE FULL BACKUP. Make this backup to a different set of backup disks, the "incremental" set. DO NOT DIRECT QUARTERBACK TO SET THE ARCHIVE BITS. This way you can do each incremental backup to the SAME SET OF DISKS each time. By NOT setting the archive bits, you are guaranteed that you'll get ALL of the files which have changed since the last full backup. Note that each incremental backup will take at least as long as the previous one, since for each incremental backup, you will be backing up ALL files which have changed since the last full backup.

Backup scheme 1 has the advantage that you have to maintain only two sets of disks, and restore, at most, two sets of disks: the full set followed by the incremental set. And to find the latest version of a particular file, you have to check only two sets of disks.

Backup Scheme 2.

This scheme uses many sets of backup disks (one full, many incremental). The advantage of this scheme is that each incremental backup contains only files which have changed since the last backup, whether the last backup was a full backup or an incremental backup. This scheme also works with file dates as well as archive bits. The disadvantage of this scheme is that you must maintain many sets of backup disks (possibly many more than two).

1. Once each month make a full backup of all your files on the hard disk to a "full backup" set of disks. For the full backup, make sure you direct Quarterback to SET THE ARCHIVE BITS. When the backup is complete, put this "full backup" set of disks aside. You won't use them again until you perform another full backup next month.
2. Between full backups, perhaps once per week, perform an incremental backup of all files which have changed SINCE THE LAST BACKUP, whether the last backup was the full backup or an incremental backup. Make each incremental backup to a different set of backup disks. Do NOT use the same backup disks for each incremental backup. DIRECT QUARTERBACK TO SET THE ARCHIVE BITS. Each incremental backup should be short, since it includes only those files which have changed since the last backup. REMEMBER: YOU MUST MAKE EACH INCREMENTAL BACKUP TO A DIFFERENT SET OF DISKS!

Backup scheme 2 has the advantage of speedy incremental backup. But you must maintain separate sets of incremental backup disks, which must be restored in the exact order they were created. And to find the latest version of a particular file, you must search many sets of backup disks (in the order the backup sets were created).

Of course, with either of these schemes, remember to save the backup report with each set of disks, so that you can easily find the latest version of a file.

To ensure the integrity of your set of backup disks, we recommend using the "Read data after write" option at least the first time you use a new set of diskettes for backup. However, this does slow down the backup process. An alternative is to preformat your diskettes using the AmigaDOS Format program, which will find any bad diskettes in the backup set.

We also recommend using alternate sets of full backup disks, so that you always have another full backup set to fall back on if one set turns out to be unusable.

GETTING STARTED

Ready to start a backup? You'll need Quarterback and a box or two of floppy diskettes and some diskette labels.

Load the Quarterback disk into one of your Amiga's disk drives.

From Workbench: double-click the Quarterback icon.

From CLI: type Quarterback.

When the first screen appears, click on either:

BACKUP FILES

or

RESTORE FILES

From that point Quarterback leads you through the backup or restore steps, as described in the following sections of this manual.

If you start Quarterback from CLI with no parameters, or from Workbench, it runs in a verbose interactive mode, prompting you for everything it needs to run. You can, however, run Quarterback from CLI with a command file, as described below. When started with a command file, Quarterback runs in a quiet mode, prompting you only for volume changes. See "Using Command Files", on page 21.

To exit from Quarterback, select the QUIT item on the Project Menu, type Right-Amiga-Q, or click on the Close Window gadget.

BACKUP FILES

Start the backup process by clicking the BACKUP FILES gadget on the Quarterback copyright screen. Quarterback displays a screen asking you to enter the AmigaDOS device name of the hard disk to be backed up. At this point you have to decide exactly what you want to back up. If you want to backup all files on a device or a partition of a device, enter the name of that device or partition, as in:

DH0:

Note: if you have partitioned your hard disk, you must backup each partition as a separate backup operation, and to a different set of backup disks.

You can use Quarterback to backup any available AmigaDOS device, including RAM:, VDO:, JH0:, a local area network, and so on. When Quarterback builds a catalog of files to backup, it automatically scans down through all levels of the directory tree structure, starting at the device or device/path that you specified. If you wish to backup files from any directory on a drive or partition, you should enter just the name of the device itself, so that Quarterback can scan from the root directory down through all levels of the directory structure.

If you want to backup only files from a single subdirectory (drawer) and nothing else, you should specify the full device:path to that subdirectory. Just enter the AmigaDOS name for the device or device:path you wish to backup.

For example, to backup only the word processing documents stored in a drawer called "documents" found in a drawer called "wp" on a hard disk drive named DH0:, you would enter:

DH0:WP/DOCUMENTS

After you enter the device or device:path, press RETURN to proceed.

On that same screen, Quarterback next asks for the AmigaDOS name of the floppy disk drive or other device to which you want your files to be copied. Initially, Quarterback assumes that you will be using floppy drive DF0: as your primary backup device. If you plan to use some device other than DF0: as your primary backup device, you should erase DF0: in the box, using the backspace key, and enter the AmigaDOS name of the device you want to use.

You must always use the proper AmigaDOS name for the device you wish to use, such as DF0:, DF2:, RAM:, etc. If you intend to backup your files to some device other than a floppy disk drive, you must know the proper AmigaDOS name for that device. To find the AmigaDOS names of all available devices on your Amiga, you can use the INFO command from CLI. See your AmigaDOS User's Guide.

For example, if your primary backup device is a Konica 10.7MB floppy drive, you would enter the name of that device as it is known to AmigaDOS, such as:

KT:

After you enter the AmigaDOS name of the primary backup device, press RETURN to proceed.

Quarterback lets you use two floppy disk drives (or any two similar devices) to backup your files. Using two floppy drives makes it possible for Quarterback to be writing to one drive while you are changing the volume (usually a floppy disk) in the other drive. That way Quarterback never has to wait while you change volumes. In order for you to use this feature, your Amiga must be equipped with two devices which have the same capacity and characteristics, such as two floppy disk drives.

Quarterback now asks for the AmigaDOS name of the "alternate" or second backup device. The alternate backup device must be identical in capacity and characteristics to the primary backup device. For example, you might use DF0: as the primary backup device and DF1: as the alternate backup device, since these two devices are identical in capacity and characteristics. However, if you use a streaming tape drive as the primary backup device, you could not use a floppy drive as the alternate backup device.

Initially, Quarterback assumes that you will be using floppy drive DF1: as your alternate backup device. If you do not have a second backup device identical to the first device, or if you do not want to use an alternate backup device, you must make sure that this box is empty. That means that you may have to erase the DF1: or other device name which may already be there. (The easy way to erase the contents of one of these boxes is to press Right-Amiga-X, or use the backspace key.)

When you have entered the AmigaDOS name of the second backup device (or erased the previous contents), press RETURN to proceed.

Quarterback checks for the presence and characteristics of the backup device(s) you have specified. If the devices cannot be found, or the backup devices are not identical in capacity and characteristics, Quarterback displays a requester identifying the problem. You must correct the incorrect entry before the backup process can proceed.

You cannot specify more than two backup devices. REMEMBER: if you have only a single device for backup, you must erase any device name that may appear in the alternate backup device box.

Note: use the SAVE OPT menu item to preserve these device names so that for future backup operations you need not enter these names again.

When Quarterback has determined that your device specifications are valid, it begins to build the catalog of files available to be backed up. For full backup of a heavily-used hard disk, this step may take as long as several minutes, during which time you should see the count of files changing as Quarterback builds the catalog. Click on the ABORT gadget if you decide not to continue the backup.

When Quarterback builds the catalog, it includes all files that it finds except for any file having the single-character name of "*". This is not a valid AmigaDOS file name, and cannot be processed by Quarterback.

When Quarterback has built the complete catalog of all files available for backup, it displays a portion of that list in a window. Use the gadgets on the right side of the window to scroll the file names up and down in the window. You can then select the individual files or groups of files to be included in (or excluded from) the backup. All files are "included" when Quarterback first displays the catalog. This means that unless you take direct action to "exclude" one or more files, all the files and subdirectories in the catalog will be backed up to hard disk.

Use the gadgets on the left side of the window to include or exclude groups of files, as described in the section "Including/Excluding Files in the Catalog", on page 18. If you wish only to backup one or two files, you should first "exclude" all files, then "include" only the ones you really want. You can move down or up the directory tree structure, including or excluding files as you wish, until you have identified all files to be processed.

When you have selected all the files you wish to back up, click on the PROCEED gadget to continue the backup. Click CANCEL if you decide not to backup any files.

BACKUP OPTIONS

Before it starts the actual backup process, Quarterback displays various options which affect the backup process. Click on the appropriate gadget to indicate your choice. An orange background indicates "true" or "selected". A black gadget indicates "false".

Set archive flag on backed-up files - Select YES if you plan to use incremental backups. This option directs Quarterback to set the archive bit for all files successfully backed up. Files with the archive bit set can be skipped during subsequent backups. The archive bit is set after all files have been written to the backup volumes. Note: this option increases the backup time a bit.

Backup full subdirectory structure - If you answer YES, Quarterback includes all subdirectories in the backup catalog, even if the subdirectory is empty (contains no files or other subdirectories). This takes up only a little more room in the catalog of the first backup disk, but makes it possible for you to restore the empty subdirectories, if you wish (using the restore full subdirectory structure option described below). You might want to do this if you are performing a full restore to a replacement disk drive, and you want the restored disk to have the exact same directory structure as the original drive.

If you select NO, Quarterback backs up only those subdirectories which contain files or other subdirectories to be backed up. Empty subdirectories are not backed up and cannot be restored.

Overwrite AmigaDOS format on floppies - Quarterback totally destroys any old data on a volume used for backups. This option directs Quarterback to overwrite each backup volume, with no checks for a valid AmigaDOS volume. If you select NO, Quarterback checks each volume for AmigaDOS format, and warns you if it finds one.

Send archive report to - This option directs Quarterback to produce a report listing the name, date/time stamp, and size of all files it backs up. This "archive" report can be directed to disk as a text file or to your printer (PRT:). If you specify "DISK" as the destination of the report, Quarterback asks for the device and path to the directory into which you want the report written. You can also include the name you wish to assign to the report. This makes it possible to store multiple archive reports in the same subdirectory, each under a different name. You can specify any valid AmigaDOS device and path. The device:path/name you specify is saved along with the other options, and is automatically restored when you invoke Quarterback. If you do not specify a device:path/name for the report, it is written to the device and directory which is current when you start Quarterback, and is named `ARCHIVE_REPORT`.

Beep for QB volume change - This option directs Quarterback to beep when it is waiting for a volume to be changed. You can specify QUIET (meaning no audible or visual warning), BEEP (audible) and/or FLASH (visible screen flash). Note that Quarterback permits both BEEP and FLASH to be selected simultaneously. Select QUIET to disable both BEEP and FLASH.

Read data after write - This option directs Quarterback to read the backup data from the backup volume after it has been written and compare the data read back with the data originally written. If the data is not absolutely identical, Quarterback warns you that something is wrong with the backup volume. If you want to be absolutely certain that your backup volumes are readable, you should select this option. If Quarterback finds an unusable volume during backup, it warns you and asks you to replace the bad volume with another volume. It then resets itself to the beginning of that volume and continues. The new volume replaces the bad volume in its entirety. You need not retain the bad volume. In fact, to avoid confusion, it is better not to retain the bad volume. Note: this option increases backup time significantly.

When you have selected the options you prefer, you can start the backup operation by clicking the PROCEED gadget. Click the CANCEL gadget to abort the backup operation.

Note: you can save these options for future backups. See page 17.

VOLUME MANAGEMENT DURING BACKUP

At last we are ready to start the actual backup.

Quarterback first displays its backup status screen, which shows the status of the backup operation and the status of the backup volume(s). Quarterback displays messages in the volume status boxes to prompt you for volume changes. Watch these boxes and the floppy drive lights to determine when to change volumes.

If you are using two floppy drives, Quarterback automatically switches disk drives as necessary, provided you keep up with the volume changes. Quarterback automatically senses whether or not you have changed volumes. If Quarterback catches up with you, it beeps and waits until you change the volume.

WARNING -- Do not remove any volume until Quarterback has turned off the drive light. If you do, the data on that volume may be corrupted.

The first data actually written to the backup device is the catalog of files which are to be backed up. The catalog is always written to the first volume of the backup set, where it can be easily found for a later restore operation. (The catalog is also written to the LAST backup volume, just in case the first volume in the set becomes unusable.)

You can abort the backup at any time by clicking on the ABORT gadget. Quarterback checks the ABORT gadget periodically, usually when it has finished performing some major activity, such as backing up an entire file. Thus, if you click on the ABORT gadget you may not see any response for several seconds. The natural temptation is to click a few more times to "wake up" Quarterback. This may create undesirable actions, since the extra clicks are usually saved, and may be acted upon in order when Quarterback finally looks for them.

A Word to the Wise -- Label all volumes used for backup with the date and volume number. During backup, Quarterback writes a unique identification code to each disk, including a sequence number and the date and time of the backup. On restore, Quarterback checks each disk for the proper sequence number, and the date and time. The date/time stamp allows Quarterback to detect intermixing of disks from different sets of backups. Be sure you feed the volumes to Quarterback in strict numerical order, matching the labels on the volumes. Don't mix up the volumes!

If Quarterback cannot open a file or detects a read error in a file during the backup, it fills the space allocated for the file on the backup disk with random data, warns you with a message on the screen, and marks the file name with

*** ERROR ***

on the archive report. However, the file does appear in the backup catalog, even though the data in the file is probably useless. This happens because the catalog is written to the first volume, long before Quarterback discovers the problem. If you attempt to restore such a file, you will probably find the contents useless. During restore, you should not trust the integrity of any files which are marked *** ERROR *** on the backup report.

RESTORE FILES

Let's hope you are reading this part of the manual out of curiosity, not necessity.

But if it is necessity, take a deep breath and calm yourself. A hard disk problem IS NOT the end of the world. It just seems that way right now.

First collect your MOST RECENT backup set and the backup reports which go along with them.

Which of the following scenarios best matches your situation?

Restore Scenario 1

Your hard disk is fine, but you accidentally clobbered some files which you want to restore from the backup set.

This is the simple case. Check your sets of backup disks to find the latest version of the file(s) you wish to restore. Then, just to be safe, consider restoring them into a different (new) directory on your hard disk. That way you can take a look at them before you move them into their proper directory.

Restore Scenario 2

Something clobbered your hard disk's directory. You get a "validation error" from AmigaDOS. Your hard drive itself is probably not damaged (we hope), but you need to restore everything.

This situation is annoying, but not a disaster. You must reformat your hard disk. Use the AmigaDOS Format program to rebuild the root directory. Follow the directions in the AmigaDOS User's Manual. The result will be an empty hard disk, ready for you to restore your files.

If you have really trashed your hard disk the AmigaDOS Format program may not help. If Format fails to work or AmigaDOS still won't talk to your hard disk, you may need to perform a low-level format step. This requires a special format program which came with your hard disk drive. (Well it should have come with your hard disk drive!) The AmigaDOS Format program does not perform a low-level format for a hard disk. Refer to the drive manufacturer's formatting instructions, or contact the manufacturer before you attempt to reformat the disk. After performing a low-level format, you still must run the AmigaDOS Format program to initialize the directory structure, as described above.

You can use the AmigaDOS LIST command to examine the hard disk's root directory. If you see "Directory is empty", then you are ready to proceed with a full restore from your backup disks. But don't start restoring files until you are sure your hard disk drive is working properly.

Restore Scenario 3

Your hard disk drive died a horrible death, with great weeping and wailing. Now you own a new boat anchor.

You have two choices. If you can get a replacement hard disk drive, install it, format it (if necessary, as described under Restore Scenario 2 above), and proceed with a full restore from your backup disks.

The other choice is to restore some of your files to a different AmigaDOS device, such as RAM: or even a floppy disk drive. Obviously you cannot restore all of the files this way, but you can restore critical files.

For a full restore, you must consider the backup scheme you have followed. If you have a full backup followed by incremental backups, you must restore the full backup first, followed by any incremental backups, in the order they were created.

Quarterback restores file notes (comments), protection bits, and the date/time stamp on all files AND all subdirectories.

Restoring a set of files takes longer than backing up that same set of files. This is because of the extra steps necessary to restore the protection bits and the date/time stamp on each restored file. Restore also performs many other data integrity checks which you may never run across, unless you have a corrupted hard disk directory or have damaged your backup disks.

During a restore operation, Quarterback replaces existing files if duplicates are found on the target device. Each original file is effectively erased before its replacement is copied from floppy. This means that if the replacement cannot be properly restored, the original is gone, and neither is available. User beware! This is to minimize disk usage. If you want to avoid the dangers of losing your original files and then having the restore fail, we suggest restoring your files to a different subdirectory or to a different device. That way you can verify the integrity of the replacements before deleting the originals.

If Quarterback cannot restore a file because of a bad disk, or if some other error prevents the successful restoration of a file, Quarterback marks the bad file on the restoration report by adding *** ERROR *** to the line where the file name appears.

Start the restore process by clicking the RESTORE FILES gadget on the Quarterback copyright screen. Quarterback asks you to enter the device:path to which you want your files to be restored.

You can use Quarterback to restore your files to any available AmigaDOS device, including RAM:, VDO:, JH0:, a local area network, and so on. Even if you know that you want only to restore files to a particular subdirectory (drawer) and nothing else, you should specify the AmigaDOS name for the device, not the full path to the subdirectory, since Quarterback will follow (or create) the subdirectory structure necessary to reach the specified subdirectory. Press RETURN to proceed.

On that same screen, Quarterback then asks for the AmigaDOS name of the device from which you want the files to be restored. Initially, Quarterback assumes that you will be using floppy drive DF0: as your primary restoration device. If you plan to use some device other than DF0: as your primary restoration device, you should erase DF0: in the box, using the backspace key, and enter the AmigaDOS name of the device you want to use.

You must always use the proper AmigaDOS name for the device you wish to use, such as DF0:, DF2:, RAM:, etc. If you intend to restore your files from some device other than a floppy disk drive, you must know the proper AmigaDOS name for that device. To find the AmigaDOS names of all available devices on your Amiga, you can use the INFO command from CLI. See your AmigaDOS User's Guide.

For example, if your primary restoration device is a Konica 10.7MB floppy drive, you would enter the name of that device as it is known to AmigaDOS, such as:

KT:

Press RETURN to proceed.

Quarterback is designed to permit the use of two similar devices to restore your files. This makes it possible for Quarterback to be restoring files from one device while you are changing the volume (usually a floppy disk) in the other device. That way Quarterback never has to wait while you change volumes. In order for you to use this feature, your Amiga must be equipped with two devices which have the same capacity and characteristics, such as two floppy disk drives.

Quarterback now asks for the AmigaDOS name of the "alternate" or second restoration device. The alternate restoration device must be identical in capacity and characteristics to the primary restoration device. For example, you might use DF0: as the primary restoration device and DF1: as the alternate restoration device, since these two devices are identical in capacity and characteristics. However, if you use a streaming tape drive as the primary restoration device, you could not use floppy drive DF1: as the alternate restoration device.

Initially, Quarterback assumes that you will be using floppy drive DF1: as your alternate restoration device. If you do not have a second restoration device identical to the first device, or if you do not want to use an alternate restoration device, you must make sure that this box is empty. That means that you may have to erase the DF1: or other device name which may already be there. (The easy way to erase the contents of one of these boxes is to press Right-Amiga-X, or use the backspace key.)

When you have entered the AmigaDOS name of the second restoration device (or erased the previous contents), press RETURN.

Quarterback checks for the presence and characteristics of the restoration device(s) you have specified. If the devices cannot be found, or the restoration devices are not identical in capacity and characteristics, Quarterback displays a requester identifying the problem. You must correct the incorrect entry before the restoration process can proceed.

You cannot specify more than two restoration devices. REMEMBER: if you have only a single device for restoration, you must erase any device name that may appear in the alternate restoration device box.

Note: use the SAVE OPT menu item to preserve these device names so that for future restore operations you need not enter these names again.

When Quarterback has determined that your device specifications are valid, Quarterback then attempts to read the catalog of files available to be restored from your backup volumes. Quarterback uses the catalog to find the name, size, and location of each file on the set of backup volumes. Quarterback cannot restore even a single file without this catalog. Because of the critical nature of the catalog, Quarterback writes two copies of the catalog to the backup volumes during the backup: one copy to the first volume of the backup set and a second copy to the last volume of the backup set.

Quarterback first tries to read the catalog stored on the first backup volume. If Quarterback cannot successfully read the catalog

from the first volume of the backup set, it displays a requester giving you three choices:

PROCEED (retry the same volume),
SKIP (skip the bad volume), or
CANCEL (stop the restoration).

Click on SKIP to direct Quarterback to search for the alternate catalog. Quarterback directs you to load the last volume of the backup set. Quarterback does not know which volume is the last volume of the backup set. YOU must do the thinking here! Quarterback scans the last volume looking for the second copy of the catalog. If Quarterback cannot find the catalog on this volume, it warns you in a requester. NOTE: It is possible that the second copy of the catalog may actually start on the next-to-last volume. In this case, Quarterback directs you to load the proper volume by number.

If neither copy of the catalog can be found, Quarterback cannot restore ANY files from that backup set.

Once Quarterback successfully reads the catalog of files available to be restored, it displays a portion of that catalog in a window so that you can select the files to be restored to your hard disk. Use the gadgets on the right side of the file window to scroll the file names up and down in the window. When you have selected the files you wish to restore, click on the PROCEED gadget. For more information, read the section "Including/Excluding Files in the Catalog", on page 18.

Click CANCEL if you decide not to restore any files.

RESTORE OPTIONS

Next, Quarterback displays various options which affect the restore operation. Click on the appropriate gadget to indicate your choice. An orange background indicates "true" or "selected".

Restore only files which already exist - This option prevents Quarterback from restoring files to the hard disk which you have deleted from the drive (and you don't want to be restored). Quarterback first checks to see if the file still exists on the target disk. If not, Quarterback skips the file.

Restore full subdirectory structure - If you are restoring to a device/path which already has a subdirectory structure which matches the catalog on the backup disks, this option has no effect.

If you select YES, Quarterback restores all subdirectories found in the backup catalog, even if the new subdirectory will be empty. If you select NO, Quarterback restores only those subdirectories which contain files marked for restoration.

You should select NO if you are restoring just a few files to a device which already has the desired subdirectory structure in place. Specify NO to avoid creating a bunch of empty directories which are of no use to you. Creating all those empty subdirectories can take many minutes. User beware!

Note: If you restore to a different subdirectory on the same device, you may run out of room on that device, especially if you specify that the full subdirectory structure is to be restored.

Overwrite existing files - This option directs Quarterback to replace existing files, with no warning. If you select "NO", Quarterback asks before it replaces an existing file.

Send restoration report to - This option directs Quarterback to produce a report listing the name, date/time stamp, and size of all files it restores. This "restoration" report can be directed to disk as a text file or to your printer (PRT:). If you specify "disk" as the destination of the report, Quarterback asks for the device and path to the directory into which you want the report written. You can also include the name you wish to assign to the report. This makes it possible to store multiple restoration reports in the same subdirectory, each with a different name. You can specify any valid AmigaDOS device and path. The device:path/name you specify is saved along with the other options, and is automatically restored when you invoke Quarterback. If you do not specify a device:path/name for the report, it is written to the device and directory which is current when you start Quarterback, and is named RESTORATION_REPORT.

Beep for QB volume change - This option directs Quarterback to beep when it is waiting for a volume to be changed. You can specify QUIET (meaning no audible or visual warning), BEEP (audible) and/or FLASH (visible screen flash). Note that Quarterback permits both BEEP and FLASH to be selected simultaneously. Select QUIET to disable both BEEP and FLASH.

Set archive bit for restored files - If you select YES Quarterback sets the archive bit for each file it restores; if you select NO Quarterback restores the archive bit as it was saved at the time of the backup. Note: during backup, the archive bit is set AFTER all files are successfully backed up. Therefore, the archive bit may not actually show up as set when the file is restored, unless you invoke this restore option.

If you plan to use incremental backups in the future, you should select this option, especially if you do a full restore to your hard drive (such as after reformatting the drive or changing the partition sizes).

When you have selected the options you prefer, you can start the restore operation by clicking the PROCEED gadget. Click the CANCEL gadget to abort the restore operation.

Note: you can preserve your restore options in the parameter file to simplify future restorations. See page 19.

VOLUME MANAGEMENT DURING RESTORE

At last we are ready to start the actual restore. Quarterback displays its restore status screen, which shows the status of the restore operation and the status of the restore volume(s). During the restore process, Quarterback displays messages in the volume status boxes to prompt you for volume changes. Watch these boxes and the drive lights to determine when to change volumes and which volume to load.

If you are restoring using two devices, Quarterback automatically switches devices as necessary, provided you keep up with the volume changes. If Quarterback catches up with you, it will wait until you change the volume. If you are using two devices for restoration, while Quarterback restores files from one device, it directs you to load the next sequential volume to the other device, so that no time is lost when the end of the first volume is reached. This works just fine if you are performing a full restoration, since the volumes are always used in numerical order, in this case. However, if you are restoring only a few files, which are scattered across several backup volumes, Quarterback may direct you to load the next sequential volume, only to discover later that it needs a different volume next. It may direct you to load a different volume without ever looking at the volume you have already loaded. To avoid this inconvenience, you should consider using only a single restoration device when you plan to restore only a few files which are scattered across several backup volumes.

You must feed the volumes to Quarterback in the order it requests them. Quarterback checks the sequence number on each volume, and refuses to accept volumes out of order. Don't mix up the volumes! If you are restoring only a few files, Quarterback may skip some volumes in the restore sequence. Don't be alarmed; this is normal.

During a restore operation, if a volume of the backup set becomes unreadable, or you cannot find one of the volumes, Quarterback lets you skip the bad or missing volume and continue with the restoration. Of course, all files which would have been restored from that volume cannot be restored, and are marked *** Error *** on the restoration report.

You can abort the restore at any time by clicking on the ABORT gadget. Quarterback checks the ABORT gadget periodically, usually when it has finished performing some major activity, such as restoring an entire file. Thus, if you click on the ABORT gadget you may not see any response for several seconds. The natural temptation is to click a few more times to "wake up" Quarterback. This may create undesirable actions, since the extra clicks are usually saved, and may be acted upon in order when Quarterback finally looks for them.

INCLUDING/EXCLUDING FILES IN THE CATALOG

Quarterback builds a catalog of files available for backup or restore. For a backup, the catalog is built from files found in the device:path you specified. For a restore, the catalog is read from the first volume of the set to be restored.

Initially, all files in the catalog are "included". This means that if you want to backup or restore all files, you can immediately click on the PROCEED gadget. If you wish to exclude a particular file from the process, click on its name in the window. Click on its name again to include it again. In this manner, you can include or exclude individual files, as you wish. Use the scrolling gadgets at the right side of the window to move through the list, if there are more than 20 files or subdirectories.

If you wish to include or exclude groups of files, you can click on the "include" or "exclude" gadgets along the left side of the file window. These commands can apply to the current directory only or to the current directory and all subdirectories, as indicated by the status gadgets. Each command performs only the action specified. This means that "inclusion" of a particular group never implies "exclusion" of any other files.

If you click on a subdirectory name, Quarterback displays the files (and subdirectories) of that subdirectory. Use the PARENT or ROOT gadgets to move back to a previous directory. You can quickly move up or down through the directory structure to examine the files available to process. Note: the term "ROOT", as used here, means the highest level directory, as defined by the device:path. If you have defined a device only, such as DH0:, then ROOT implies the root directory of DH0:. If you have defined a complete directory path with your device, as in DH0:SYSTEM, then ROOT implies that specific directory on DH0:.

Quarterback displays the files and any subdirectories of the catalog in alphabetical order, with subdirectories listed first. Files included for backup or restore are displayed in black letters on an orange background. Files excluded for backup or restore are displayed in white letters on a black background. Subdirectory names are displayed in orange on a black background. Note: subdirectory names always appear in these colors, even if you "exclude" an entire subdirectory. However, if you click on the subdirectory name, you can easily determine the status of the files within that subdirectory.

Note: These colors depend upon your Preferences settings. The colors described here represent the standard Preferences colors of Workbench V1.2. Your colors may vary.

Quarterback displays a status line near the top of the screen showing the number of files currently included, the total number of files in the catalog, and the total size in bytes of the included files to be restored.

The "include" and "exclude" gadgets work as follows:

INCLUDE/EXCLUDE ALL - These gadgets include all files or exclude all files. Use the EXCLUDE ALL gadget to exclude all files quickly, so that you can then include certain files or groups of files for backup or restore.

INCLUDE/EXCLUDE BY NAME - These gadgets trigger a request from Quarterback for the name of the file(s) to include or exclude. You can use wild cards here to include or exclude particular groups of files by name. Use the standard Amiga wild card characters "?" to specify any single character, and "#?" for any number of characters in the file name.

Quarterback does NOT support the full wild card options of AmigaDOS. Wild cards are limited to ? anywhere in a name, and #? appearing ONCE in a name, such as:

GA?E#?.c

or

files#?

INCLUDE/EXCLUDE BY DATE - These gadgets let you include or exclude files based on their file date. These gadgets trigger a request from Quarterback for the cutoff date you wish to use. The INCLUDE BY DATE gadget includes only those files which have file dates equal to or later than the specified date. The EXCLUDE BY DATE gadget excludes only those files which have a file date earlier than the specified date.

INCLUDE/EXCLUDE ARCHIVE - These gadgets let you include or exclude files according to the state of the file's archive bit. AmigaDOS CLEARS the archive bit on a file when a program changes the file. Quarterback can be instructed to SET the archive bit for any file it backs up or restores. Then if a file is changed before the next backup, Quarterback knows that the file should be backed up again. Files which have not changed since the last backup will still have the archive bit set, and can be ignored for this backup.

Click the INCLUDE ARCHIVE gadget to include all files whose archive bit is CLEAR (file changed). Click the EXCLUDE ARCHIVE gadget to exclude all files whose archive bit is SET (file unchanged). Note that clicking on either of these gadgets produces the same effect. Unlike the other include/exclude gadgets, these gadgets DO NOT produce complementary results.

SAVING YOUR OPTIONS

When you have specified the various Quarterback backup/restore options which you prefer to use, you can save these options in a parameter file. Quarterback restores these options (if it can find the options file) for subsequent backup/restore operations.

To save these options for future use, select SAVE OPT from the Project menu, or type Right-Amiga-S.

Quarterback stores its parameter file, QB2.OPT, in the S: directory. This directory is normally found on the Workbench disk in DF0:. Most hard disk users use the AmigaDOS ASSIGN command to assign the S: subdirectory to their hard disk. You may wish to add this command to your startup-sequence. Otherwise, you may be asked to put your Workbench disk back into a drive so that Quarterback can find the parameter file. After you have begun a restore operation using DF0:, and Quarterback has already taken over DF0:, you will not be able to use DF0: to access the S: subdirectory. In this case you must wait until after you have completed the restore in order to save your options.

When you start Quarterback for the first time, there will be no options file. If you never save your option choices, no options file will ever be created. If Quarterback cannot find the options file, it uses predefined selections for all option parameters. By saving your particular options, you override the predefined options.

BACKUP/RESTORE REPORT

When Quarterback performs a backup or restore process, it prints an optional report listing all files processed, the date of the activity, and the device:path. We recommend that you keep the backup report with the set of volumes produced by the backup. Caution: These reports can become very lengthy, and can take a long time to print. Consider saving them to disk, but be aware that they can take up considerable disk space.

If you choose to direct a report to disk, you can assign a unique device:path/name to the report before starting the backup/restore operation (see Backup Options or Restore Options). If you do not assign a unique name to a report, Quarterback assigns it a standard name, and the report replaces any previous report having that same name.

If you see this warning:

*** Error ***

next to the name of a file, this indicates that Quarterback may not have been able to backup or restore that particular file. In some cases you may find that some portion of the file may be recoverable. In all cases, Quarterback preserves as much of a file as possible.

If you specify that an archive or restoration report is to be sent to a disk file, but Quarterback cannot successfully open a file for the report (because of an illegal or nonexistent path name for the report), Quarterback reports this fact to you in a requester, and asks if you wish to retry. If you answer NO, Quarterback produces no report. If you answer YES, Quarterback uses the default report name and places the report in the current directory (the current directory when you started Quarterback). This applies only to reports sent to a disk file. If you specified PRT: to receive the report, the proceeding comment does not apply.

USING COMMAND FILES

If you are familiar with the Amiga CLI interface, and if you wish to make frequent backups of selected subdirectories, you may wish to invoke Quarterback with a command file containing lists of files to backup. In this mode Quarterback takes its commands from the file, loads your options from the parameter file, and automatically begins the backup. All you have to do is change the volumes.

To invoke Quarterback from CLI with a command file, type the following:

Quarterback WITH file

where 'file' is the name of the file you have prepared containing Quarterback commands. The Quarterback command file is an ASCII text file, prepared using any standard text editor, such as ED or TxED.

The basic syntax is:

BACKUP device:path [options]

or

RESTORE device:path [options]

The device:path must be a valid AmigaDOS device with optional directory path. The directory path must already exist, if specified.

The options are keyword parameters in any order, defined as follows:

ARCHIVE	Include only files with the archive bit clear.
DATE dd-mmm-yy	Include only files changed on or after that date.
INCLUDE file(s)	Include this file. Wild cards permitted.
EXCLUDE file(s)	Exclude this file. Wild cards permitted.
INCLUDE ALL	Include all files.
EXCLUDE ALL	Exclude all files.

Command line or command file parameters can be in any order, but are executed in the order listed. Some keywords make no sense if executed in the wrong order. Be certain that you consider the effects of each keyword as you decide the order to enter them. For example, it makes no sense to follow DATE xx-mmm-yy with INCLUDE ALL.

Let's assume your command file is called BACKUP_DOCS, and contains:

```
BACKUP DHO:WP/DOC EXCLUDE ALL ARCHIVE INCLUDE #?.DOC
```

If you type: Quarterback with BACKUP_DOCS

Quarterback will backup all document files which have been modified since the last backup having any name ending in ".DOC" in subdirectory WP/DOC on hard disk DHO:.

Quarterback can also be invoked with parameters via the CLI command line. Command line parameters are the same as for a command file. For example, to invoke Quarterback to backup word processing documents which have changed since the last backup in subdirectory WP on DHO:, you would type:

```
QUARTERBACK BACKUP DHO:WP EXCLUDE ALL ARCHIVE
```

ACCESSING AmigaDOS

You can open a new CLI window from within Quarterback. Select the New CLI option in the Project Menu. You can then perform other operations while Quarterback is running. Note: For this function to work, you must have both the "NewCLI" and "RUN" programs in your C: directory.

AMIGA 2000 USAGE

Quarterback can backup files from any standard AmigaDOS device, including an Amiga partition on a hard disk drive attached as an MS-DOS peripheral on an Amiga 2000. This device is normally defined as JH0:. Note, however, that Quarterback cannot directly access files on the MS-DOS partition of that disk drive. Therefore, you cannot use Quarterback to backup the MS-DOS files on an A2000.

You can also backup and restore your MS-DOS virtual disk drives on an Amiga hard disk drive using Quarterback. You must specify the partition name and path (i.e. P2:MS-DOS) to the single Amiga file which contains the MS-DOS files.

WARNING - If you attempt to restore this file, you **MUST** perform this restore **BEFORE** you issue the JLINK command.

If you attempt to restore the file **AFTER** the JLINK command, Quarterback will be unable to write into the file and you will see a cryptic requester indicating a restore error. This happens because the file is locked for Amiga writes by the JLINK command, and cannot be deleted or written into from the Amiga side of the Bridgeboard.

If you have two 3.5-inch floppy drives, and they are physically arranged with DF2: on the left and DF0: on the right, you can force Quarterback to display DF2: status in the left status box and DF0: status in the right status box. This way the status boxes correspond to the physical arrangement of the disk drives. To do this, simply enter DF2: as the primary backup device and DF0: as the secondary backup device. The primary backup device is always assigned to the left status box, and the secondary backup device is always assigned to the right status box. Use the SAVE OPT menu item to preserve this arrangement.

HAVING PROBLEMS?

Quarterback works best for you when used on a regular basis. But even if you use Quarterback on a daily basis, you may still have many hours' of work tied up in files which are not backed up. So you may find yourself trying to salvage your files from a corrupted hard disk. Quarterback may not be able to salvage your files, if the hard drive has problems.

We designed Quarterback to follow the rules and guidelines for program design in the multitasking environment of the Amiga. To ensure widest compatibility, Quarterback always accesses the hard disk through standard AmigaDOS system requests. This means that Quarterback NEVER directly reads from or writes to your hard disk drive. It ALWAYS employs standard AmigaDOS file open, read, write, and file close commands. If AmigaDOS cannot perform the requested function or worse yet "crashes" because of extreme corruption, your first thought may be to blame Quarterback. This problem is most likely caused by your hard disk.

Hard disk problems fall into two categories: "hard errors" and "soft errors". Hard errors are physical problems of the disk drive and/or the drive controller causing unrecoverable read/write errors. Usually these errors are limited to one or two specific areas of the disk, meaning that you may be able to save most of your files using Quarterback or some other copy program.

Soft errors are not physical drive problems. They are errors in the directory structure (data) stored on the disk drive. The drive may perform actual physical reads and writes just fine. But if the directory structure of the drive becomes corrupted, AmigaDOS (and, therefore, Quarterback) may not be able to work with the drive. In this case you may see this message:

ERROR VALIDATING DRIVE DH0:

This error indicates that AmigaDOS cannot find the proper root directory structure on the drive. This problem is frequently caused by a power failure or system crash while some program is writing to the hard disk. Most or all of your files are probably in good shape, out there somewhere on the hard disk. But AmigaDOS (and, therefore, Quarterback) cannot find the files in order to copy them off the hard disk.

If your hard disk won't validate, things are pretty serious. Here are a few suggestions. First, reboot your Amiga. If that doesn't help, try to fix the problem using DISKDOCTOR. This is a CLI program which you can find on the Workbench Extras disk. If you don't know how to use CLI, you should contact your Amiga dealer. DISKDOCTOR can sometimes fix the validation problem, but it also has a habit of resurrecting deleted files and further garbling things on the hard disk. In all fairness to DISKDOCTOR, remember that it is a last resort program, and it may just be revealing a mess which existed BEFORE you ran DISKDOCTOR. If DISKDOCTOR succeeds, immediately run Quarterback to get your most critical files off the hard disk. DO NOT SET THE ARCHIVE BITS IN THIS CASE!

DO NOT WRITE ANYTHING TO THE HARD DISK UNTIL YOU HAVE GOTTEN EVERY FILE YOU WANT TO SAVE OFF THE HARD DISK!!!

After you run DISKDOCTOR, or if DISKDOCTOR can't straighten out the mess, you have no choice but to perform a high-level format. Use this only as a last resort, since this effectively erases EVERYTHING from the disk drive.

There are other manifestations of directory structure problems that are not so severe. Here are some symptoms:

When Quarterback tries to build the catalog of files, it never stops counting files, even thousands of them, many more than are actually on the hard disk.

This problem is caused by a subdirectory which has a "loop" in its directory structure. Quarterback cannot get by the loop. You must first find the subdirectory causing the problem. Use the CLI commands CD and LIST to examine the subdirectories one by one until you find the one which never stops listing files (you will see the same names going by over and over). Now use Quarterback or the COPY program to backup the other good subdirectories of the hard disk. After you have saved all you can, try to delete all the files from the bad subdirectory and then delete the bad subdirectory itself. If that fails, you may have to format the hard disk and restore all files from your backup volumes.

Quarterback crashes when it reaches a certain file. Every time you run Quarterback, it crashes on that same file.

This problem is caused by a form of subdirectory corruption so severe that AmigaDOS crashes while trying to read or write that file. To determine which subdirectory is causing the problem, carefully watch the Quarterback status screen while the backup is running. Try to write down the complete subdirectory path which was displayed just before the crash. Then use the CLI LIST command to examine that subdirectory. Try to copy the files using the COPY command, if you do not have them backed up elsewhere. Then delete the entire subdirectory, using the DELETE ALL command. If AmigaDOS continues to crash as you use these programs, you might try DISKDOCTOR. Ultimately, if all else fails, format the drive and restore from your backup volumes.

Here are some other potential problems which you may encounter, and possible solutions.

Insufficient memory - Quarterback itself is small, but it needs lots of memory to build its catalog of files, and it needs buffer space in "chip" memory. If you experience memory problems, you may need to stop other programs, especially memory-resident utility programs.

Errors reading backup volumes during restore - If Quarterback reports errors reading backup volumes during a restore, it may not be able to restore one or more files from the affected volume. Quarterback attempts to restore as much of the affected file(s) as possible, but all or part of the file(s) may be missing or contain useless data. Quarterback displays in a requester the name of each file which it cannot restore completely, and marks each name with *** Error *** on the restoration report.

Locked files during restore - Files which are locked by another program cannot be restored by Quarterback. If necessary, terminate other programs which may be interfering. You may have to reboot your Amiga to unlock files which were left locked by another program. Quarterback cannot unlock locked files.

Quarterback occasionally seems to "hang" during backup/restore. We have identified a problem with Trackdisk.device, which is the floppy disk device driver supplied by Commodore with all versions of Workbench. This device driver sometimes causes Quarterback to "hang". When this happens, Quarterback does not respond to gadget clicks or disk changes. You have no choice but to reboot the Amiga and try the operation again. Commodore claims they will correct the problem in a future release of Workbench, but until then we can only recommend that you always keep a floppy disk in all unused floppy drives. This solves the problem and also stops that annoying "click-click". Note that this problem can affect ANY program which reads or writes to the floppy disk drives. THIS IS NOT A QUARTERBACK PROBLEM!!!

Quarterback "damaged" my hard disk - When you use Quarterback, you may encounter hard disk read/write errors which you have never seen before. This may lead you to think that Quarterback has somehow damaged your disk drive. This just isn't so. Quarterback cannot cause damage to your hard disk. In fact, Quarterback always goes through AmigaDOS to read and write files to and from your hard disk. AmigaDOS, in turn, goes through the disk driver software provided with your hard disk to perform the actual reads and writes. Quarterback NEVER performs any direct I/O to any hardware device.

We designed Quarterback so that it can work with ANY hard disk drive. If Quarterback tried to perform direct I/O to the hard drive, it would have to know the intimate programming details for all hard drives available for the Amiga, and we would spend all our time bringing out new versions of Quarterback to handle all the new hard drives. So you see, Quarterback must depend on AmigaDOS and your own hard disk driver software to provide access to your hard drive. And it is VERY unlikely that ANY software can damage your hard drive.

If you are like most hard disk users, you probably tend to use only a small portion of the hard drive on a daily basis. However, when you perform a full backup of a hard drive which is full, or nearly full, Quarterback will direct AmigaDOS (which will, in turn, direct the hard disk driver) to read practically every sector of the hard disk. If a hard disk sector has been damaged (usually by physical damage, such as dust particles inside the drive, heads touching the surface during startup/shutdown, etc.) or if a directory structure, file header or drive bitmap has been corrupted (by software crash during writes, software bugs in various programs, etc.) anywhere on the hard drive since the last full backup, it is quite likely that the problem will show up when you run Quarterback. While it may appear that Quarterback caused the problem, you can see that in reality Quarterback merely revealed an existing problem.

We don't have any particular solution to offer for problems such as this, except to make frequent backups! The more often you run Quarterback, the less likely you are to lose a significant amount of data when these problems arise.

Quarterback won't accept any backup diskettes during a restore - Your computer may have caught a virus. It is VERY unlikely that a whole set of diskettes would fail, especially if you directed Quarterback to check the diskettes as the data was written to them (read after write option). More than likely you have a virus on your computer which is corrupting each diskette as you insert it during restore. Whatever you do, STOP LOADING DISKETTES until you find out whether or not your computer is infected. There are various virus checkers available which can help you determine if this is happening. However, new virus strains keep appearing, so you cannot depend on the virus checkers to guarantee the health of your machine.

Attention Supra Hard Disk Owners - Supra's Version 5.1 hard disk driver (required for the Fast File System) has a known problem which causes THE DRIVER to crash, with Guru Meditation number 3, while running with Quarterback. Contact Supra for the newest release of their driver (Currently V5.3). Unfortunately, the same thing happened when Supra first released their autoboot hard disk driver. Supra subsequently revised this driver also, correcting the problem. Contact Supra for more information.

Attention A2000 Owners - Many A2000 owners have experienced problems when using Quarterback on a A2000 equipped with a Commodore 2090 disk controller and the Micron 2MB memory expansion board. Micron blames Commodore and Commodore blames Micron. Micron has suggested reversing the slot positions for the two boards. We are caught in the middle. All we can say for sure is that the problem is not caused by Quarterback, and that it goes away if you change memory boards.

TECHNICAL INFORMATION

Quarterback performs a file-by-file backup. It does not save an image of the hard disk. This means that the backup time depends solely upon the number and size of the files to be backed up. It also means that when files are restored to a freshly-formatted hard disk, the files are stored with less fragmentation, resulting in faster access times.

Quarterback has very low overhead per file. The backup catalog entry is about 25 bytes per file (depending on the length of the file name and possible file comments). There is a 14-byte ID per backup volume. Each file is stored as pure data. No compression is used, other than the fact that Quarterback has much lower overhead per volume than AmigaDOS, and consequently is able to store more useful data per volume than AmigaDOS.

The diskettes written by Quarterback are not compatible with AmigaDOS. Therefore, you must use Quarterback to find and restore the files from a set of backup volumes. Remember to keep a copy of Quarterback on a floppy disk, so that you can restore your files, if your hard disk drive fails.

Backup diskettes produced by Quarterback can be copied/verified using the AmigaDOS DISKCOPY utility. This means that you can make duplicate copies of Quarterback backup disks, if you wish.

In our own testing of Quarterback, we have backed up a full 20MB hard disk in about 30 minutes, in the fastest mode (write verification disabled and archive bits not set). The fastest speed is achieved on systems having a full DMA disk controller and a fast hard disk and using the Fast File System. Your results will vary, of course, depending on the speed of your hard drive and the degree of fragmentation of your files.

Quarterback was written entirely in assembly language by George Chamberlain, of Central Coast Software.

CCS PRODUCT CATALOG

Here are a few other great products for your Amiga from the friendly people at Central Coast Software:

DOS-2-DOS - Transfer MS-DOS and Atari ST files to/from your Amiga!

Dos-2-Dos lets you read/write MS-DOS and Atari disks using the standard 3.5-inch (or 5.25-inch) floppy disk drives on your Amiga. Dos-2-Dos also permits access to any MS-DOS volume available via AmigaDOS, including MS-DOS partitions on hard disks and MS-DOS volumes on LANS or SCSI networks.

- * Supports single and double sided 5.25-inch as well as 3.5-inch 720KB MS-DOS diskettes
- * Reads/writes 3.5-inch Atari ST diskettes (GEM format)
- * Reads a variety of 5.25-inch MS-DOS floppy formats via the new CLTD Konica high-density floppy drive
- * Converts ASCII file line-ending characters and provides Wordstar compatibility
- * Supports full directory path names, with wild cards in the file names
- * Allows selection of MS-DOS and AmigaDOS subdirectory and displays sorted directory listing
- * Formats 3.5" and 5.25" MS-DOS diskettes
- * Provides duplicate file name detection with query/replace options
- * Provides TYPE and DELETE commands
- * Permits renaming of files where file name restrictions occur
- * Remains resident to permit AmigaDOS disk swapping. \$55.00

MAC-2-DOS - Transfer Macintosh files to/from your Amiga!

Mac-2-Dos lets you attach a Macintosh floppy disk drive to your Amiga, so you can read/write Macintosh files. You can quickly and easily import those graphic images from the Mac, or output your Postscript document to a Mac disk, from which you can have it printed using high-quality, professional typesetting equipment. Mac-2-Dos reads, writes and formats single-sided disks (flat file format) or double-sided disks (hierarchical file format). It translates ASCII files and provides IFF conversion utilities to/from MacPaint and other popular Mac graphics formats.

Mac-2-Dos includes a custom interface and a Macintosh external 3.5-inch drive. Mac-2-Dos also includes a special driver which allows the Mac drive to read/write standard Amiga diskettes. \$249.95

Mac-2-Dos is also available without the Macintosh drive. This option DOES NOT include the ability to use the Mac drive to read/write Amiga diskettes. \$99.95

QUARTERBACK TOOLS - OPTIMIZE HARD DISK PERFORMANCE

Quarterback Tools provides a collection of high-quality, user friendly utilities to enhance use of your Amiga.

- * Optimize hard disk organization to speed file access
- * Undelete deleted files safely and easily
- * Map disk space usage
- * Verify readability of every block on disk
- * Automatically map out bad sectors
- * Detect and fix disk corrupted directories
- * Verify file integrity
- * Edit files and disk sectors
- * Search for files throughout the disk
- * Compare file contents

Quarterback Tools works with AmigaDOS-compatible disk drive on any Amiga. \$89.95

Prices are FOB Golden, Colorado, USA, and are subject to change without notice. These products are available directly from Central Coast Software. We accept MC/VISA and checks in US dollars drawn on US banks. Our products are also available from most Amiga dealers around the world.

USER NOTES





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